



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,447	08/08/2001	Kunihiro Ueda	110262	9082

25944 7590 09/16/2003

OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER

CULBERT, ROBERTS P

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/923,447

Applicant(s)

UEDA ET AL.

Examiner

Roberts Culbert

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 August 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 5 recites the limitation "performing wet etching on the *side face* mechanically polished". There is insufficient antecedent basis for this limitation in the claim. For the purpose of examination, it is assumed that the limitation was intended by applicant to read: "performing wet etching on the *end face* mechanically polished".

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,497,611 to Sakurada.**

Sakurada teaches a method of manufacturing a magnetic head including a magneto-resistive device comprising: forming a magneto-resistive film (20) on a base; and mechanically polishing an end face of the magneto-resistive film (Col. 9, Lines 21-23), and performing wet etching using a solvent on the end face mechanically polished (Col. 10, Lines 29-38). Note that step S105 (See figure 7 of Sakurada)

Art Unit: 1763

also reads on the claimed wet-etching process as the second polishing step is performed by means of a solvent.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 3-5, 7-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of U.S. Patent 6,477,019 to Matono.**

The admitted prior art, on page 3 of applicant's specification teaches that it is conventional to mechanically polish the air-bearing surface and afterwards remove particles by dry etching ion milling and the like.

The admitted prior art fails to show wet etching to polish the air-bearing surface.

Matono teaches a method of manufacturing a magnetic head including the step above of etching the air-bearing surface (end face) of the magneto-resistive film. Matono further teaches that in addition to dry etching and ion milling, wet etching may also be used (Col. 4, Lines 32-33).

It would have been obvious to one of ordinary skill in the art at the time of invention to use wet etching in the prior art method described by applicant. One of ordinary skill in the art would have been motivated at the time of invention to use wet etching as Matono teaches that the method is equivalent to both dry etching and ion milling for the purpose of etching the air-bearing surface of a magneto-resistive film.

Art Unit: 1763

Regarding claims 3,4,7-9, and 12-14, Official Notice is taken of the fact that the steps of forming a first ferromagnetic layer, tunnel barrier layer, and second ferromagnetic layer; the steps of forming a perpendicular current path; and the step of forming a recording head on a base are entirely conventional in the art of fabricating magnetic heads. It would have been obvious to one of ordinary skill in the art at the time of invention to fabricate the magnetic head in the conventional manner.

Regarding claim 10, as applied above, the admitted prior art in view of Matono teaches the method of the invention as claimed, but does not show the step of mounting the slider on the slider suspension. However Official Notice is taken of the fact that the claimed step is conventional in the art of fabricating a magnetic head. It would have been obvious to one of ordinary skill in the art at the time of invention to mount the slider in the conventional manner.

**Claims 2, 6, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of U.S. Patent 6,477,019 to Matono as applied to claims 1, 3-5, 7-10, and 12-14 above, and in further view of U.S. Patent 5,687,045 to Okai.**

As applied above, the admitted prior art in view of Matono teaches the method of the invention substantially as claimed, but does not teach the use of acid or alkali for polishing the end face of the MR film.

Okai teaches that a working fluid of pH 6-8 may be used to polish the air-bearing surface of a magnetic head. See Abstract.

It would have been obvious to use a fluid of pH recommended by Okai in order to reduce pole top recessions on the air bearing surface as taught by Okai.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 5,795,490; 5,897,984; 6,353,316; and 5,749,769; and Japanese Patents and Publications: JP 401352705 A; JP 406096425 A; JP 408022607 A; JP 02301010 A; and JP 10289414 A.

Art Unit: 1763

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (703) 305-7965. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

R. Culbert



*Primary Examiner  
BU 1763  
P-Hassonzedt*